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=> d his

     (FILE 'HOME' ENTERED AT 08:52:10 ON 29 AUG 2006)
     FILE 'CA' ENTERED AT 08:52:23 ON 29 AUG 2006
L1 2007761 S (ABNORMAL? OR ANOMAL? OR PATHOG? OR CANCER? OR MALIGN? OR TUMOR?
           OR ADENOMA OR CARCINO? OR DISEASE# OR PATHOLOGIC? OR NEOPLAS? OR
           ADENOCAR? OR METAST?)
L2  486036 S L1(7A)(DETECT? OR DETERMIN? OR MONITOR? OR MEASUR? OR ASSAY? OR
           ANALY? OR TEST? OR INVESTIGAT? OR STUDY OR CHARACTERI? OR
           DIAGNOS? OR SCREEN? OR SENSE# OR SENSING OR SENSOR OR IDENTIF? OR
           PROBE# OR PROBING OR ASCERTAIN? OR DISTINGU? OR ASSESS? OR
           EXAMIN?)
L3   90836 S L1 AND(915 OR 433 OR 500 OR 45#)
L4    2982 S L2 AND(MICROWAVE OR MHZ OR MEGAHERTZ OR MEGAHZ OR (MEGA OR M OR
           GIGA OR G)(W)(HERTZ OR HZ) OR GHZ OR GIGAHZ OR GIGAHERTZ OR
           MHERTZ OR GHERTZ OR RADIOFREQUENC? OR RF OR(RADIO OR
           CHARACTERISTIC)(2A)FREQUENCY OR RADIOMET?)
L5     258 S L3 AND L4
L6     232 S L5 NOT METASTAB?
L7     119 S L6 AND PY<2000
L8      91 S L7 NOT(ALLOY OR AAS OR SEASONAL OR CHROMATOG? OR VOLTAM?)
L9      86 S L8 NOT(OPTICAL OR SUPERCOND? OR SUPERPARA? OR LASER OR FOOD OR
           INTERSTEL?)
L10    511 S L2 (6A)(MICROWAVE OR MHZ OR MEGAHERTZ OR MEGAHZ OR (MEGA OR M OR
           GIGA OR G)(W)(HERTZ OR HZ) OR GHZ OR GIGAHZ OR GIGAHERTZ OR
           MHERTZ OR GHERTZ OR RADIOFREQUENC? OR RF OR(RADIO OR
           CHARACTERISTIC)(2A)FREQUENCY OR RADIOMET?)
L11    338 S L10 AND PY<2000
L12     96 S L11 AND(TISSUE OR SKIN OR ORGAN OR COLON? OR STOMACH OR LUNG OR
           BREAST OR BRAIN OR BIOLOG? OR PATIENT)
L13     92 S L12 NOT(METASTAB? OR ALLOY OR AAS OR SEASONAL OR CHROMATOG? OR
           VOLTAM?)
L14     89 S L13 NOT(OPTICAL OR SUPERCOND? OR SUPERPARA? OR LASER OR FOOD OR
           INTERSTEL?)
L15    138 S L9,L14 NOT NMR
L16    112 S L15 NOT(SOLAR OR P 450 OR IMMUNOHIST? OR POLYMERAS? OR CURIE OR
           SKIN DEPTH)
L17     98 S L16 NOT(CYCLOTRON OR SOIL OR RADIOACT? OR HEART(1A)DISEASE)
L18   1853 S (RETURN?(1A)LOSS OR REFLECT?(1A)POWER)
L19    426 S L18(6A)(DETECT? OR DETERMIN? OR MONITOR? OR MEASUR? OR ASSAY? OR
           ANALY? OR TEST? OR INVESTIGAT? OR CHARACTERI? OR ESTIMAT? OR
           SCREEN? OR SENSE# OR SENSING OR SENSOR OR IDENTIF? OR PROBE# OR
           PROBING OR ASCERTAIN? OR DISTINGU? OR ASSESS? OR EXAMIN? OR
           EVALUAT? OR QUANTITAT? OR QUANTIF?)
L20    353 S L18/TI,IT,ST
L21    104 S L19 AND L20
L22     61 S L18 AND(915 OR 433 OR 500 OR 45# OR 1350 OR 1800)NOT 45
L23    142 S L21-22 AND PY<2000
L24    152 S L18 (6A)(MICROWAVE OR MHZ OR MEGAHERTZ OR MEGAHZ OR (MEGA OR M
           OR GIGA OR G)(W)(HERTZ OR HZ) OR GHZ OR GIGAHZ OR GIGAHERTZ OR
           MHERTZ OR GHERTZ OR RADIOFREQUENC? OR RF OR(RADIO OR
           CHARACTERISTIC)(2A)FREQUENCY OR RADIOMET?)
L25     12 S L23 AND L24
L26    210 S L18 AND(MICROWAVE OR MHZ OR MEGAHERTZ OR MEGAHZ OR (MEGA OR M OR
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GIGA OR G)(W)(HERTZ OR HZ) OR GHZ OR GIGAHZ OR GIGAHERTZ OR MHERTZ OR GHERTZ OR RADIOFREQUENC? OR RF OR(RADIO OR CHARACTERISTIC)(2A)FREQUENCY OR RADIOMET?)/TI
L27 16 S L23 AND L26
L28 116 S L17,L25,L27
FILE 'BIOSIS' ENTERED AT 10:39:46 ON 29 AUG 2006
L29 509 S L28
L30 229 S L29 AND(MICROWAVE OR MHZ OR MEGAHERTZ OR MEGAHZ OR (MEGA OR M OR GIGA OR G)(W)(HERTZ OR HZ) OR GHZ OR GIGAHZ OR GIGAHERTZ OR MHERTZ OR GHERTZ OR RADIOFREQUENC? OR RF OR(RADIO OR CHARACTERISTIC)(2A)FREQUENCY OR RADIOMET?)/TI,IT
L31 486888 S L2/TI,IT
L32 143 S L30 AND L31
FILE 'MEDLINE' ENTERED AT 10:47:45 ON 29 AUG 2006
L33 83 S L32
FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 10:51:16 ON 29 AUG 2006
L34 294 DUP REM L28 L32 L33 (48 DUPLICATES REMOVED)

=> d bib,ab l34 1-294

L34 ANSWER 25 OF 294 BIOSIS on STN
AN 2002:129360 BIOSIS
TI **Microwave** method and system to **detect** and locate **cancers** in heterogenous **tissues**.
AU Bridges, J. E. [Inventor]
CS Park Ridge, Ill., USA ASSIGNEE: INTERSTITIAL, INC.
PI US 5829437 19981103
SO Official Gazette of the United States Patent and Trademark Office Patents, (**Nov. 3, 1998**) Vol. 1216, No. 1, pp. 143. print.

L34 ANSWER 29 OF 294 MEDLINE on STN
AN 1999052260 MEDLINE
TI Two-dimensional FDTD analysis of a pulsed **microwave** confocal system for **breast cancer detection**: fixed-focus and antenna-array **sensors**.
AU Hagness S C; Taflove A; Bridges J E
CS Department of Electrical and Computer Engineering, University of Wisconsin-Madison 53706, USA.. hagness@engr.wisc.edu
SO IEEE transactions on bio-medical engineering, **(1998 Dec)** Vol. 45, No. 12, pp. 1470-9.
AB A novel focused active **microwave** system is **investigated** for **detecting tumors** in the **breast**. In contrast to X-ray and ultrasound modalities, the method reviewed here exploits the **breast-tissue** physical properties unique to the microwave spectrum, namely, the translucent nature of normal **breast tissues** and the high dielectric contrast between malignant tumors and surrounding lesion-free normal **breast tissues**. The system uses a pulsed confocal technique and time-gating to enhance the detection of tumors while suppressing the effects of **tissue** heterogeneity and absorption. Using published data for the dielectric properties of normal **breast tissues** and malignant tumors, we have conducted a two-dimensional (2-D) finite-difference time-domain (FDTD) computational electromagnetics analysis of the system. The FDTD simulations showed that tumors as small as 2 mm in diameter could be

robustly detected in the presence of the background clutter generated by the heterogeneity of the surrounding normal **tissue**. Lateral spatial resolution of the tumor location was found to be about 0.5 cm.

L34 ANSWER 58 OF 294 CA COPYRIGHT 2006 ACS on STN
AN 128:138236 CA
TI Cell for measurement of complex permittivity of normal and cancerous **breast tissue**
AU Stelter, Jaroslaw; Wtorek, Jerzy; Polinski, Artur; Nowakowski, Antoni
CS Dep. Medical Ecological Electronics, Technical Univ. Gdansk, Gdansk, 80952, Pol.
SO Internationales Wissenschaftliches Kolloquium - Technische Universitaet Ilmenau (**1997**), 42nd(Band 2), 210-215
AB A measuring cell was developed and elec. impedance measurements at 103-107 Hz were performed with normal and cancerous **breast tissue**. **Cancerous tissues** have higher **characteristic frequency** than normal ones. The time between sample acquisition and measurement is a crit. parameter, however.

L34 ANSWER 86 OF 294 BIOSIS on STN
AN 1995:459612 BIOSIS
TI The **measured** electrical properties of normal and **malignant** human **tissues** from 50 to 900 **MHz**.
AU Joines, William T. [Reprint author]; Zhang, Yang; Li, Chenxing; Jirtle, Randy L.
CS Dep. Elect. Eng., Duke Univ., Durham, NC 27708, USA
SO Medical Physics (Woodbury), (**1994**) Vol. 21, No. 4, pp. 547-550.
AB The electrical conductivity and relative permittivity of **malignant** and normal human **tissues** were **measured** at frequencies from 50 to 900 **MHz**. The measurements were made between 23 and 25 degree C using a network analyzer connected to a flat-ended coaxial probe that was pressed against the freshly excised **tissue** samples. The malignant **tissues** were of the following normal **tissue** origin: bladder, **colon**, kidney, liver, **lung**, lymph nodes, mammary gland, spleen, and testes. The normal **tissues** included: **colon**, kidney, liver, **lung**, mammary gland, and muscle. Normal **tissue** samples of bladder, lymph, spleen, and testes were not available. In general, at all frequencies tested, both conductivity and relative permittivity were greater in malignant **tissue** than in normal **tissue** of the same type. For **tissues** of the same type, the differences in electrical properties from normal to malignant were the least for kidney (about 6% and 4% average differences over the frequency range in permittivity and conductivity, respectively), and these differences were the greatest for mammary gland (about 233% and 577% average differences in permittivity and conductivity, respectively). To illustrate a potential use of these data in hyperthermia applications, frequency-selective heating of malignant **tissue** (modeled as a sphere) surrounded by host normal **tissue** is calculated from the measured electrical properties for certain **tissues**.

L34 ANSWER 89 OF 294 CA COPYRIGHT 2006 ACS on STN
AN 120:312564 CA
TI A sensitive low-**power** homodyne **reflectometer** for impedance **measurements**

at 0.25-1.0 **GHz**
AU Pieper, John B.; Price, John C.
CS Dep. Phys., Univ. Colorado, Boulder, CO, 80309-0390, USA
SO Review of Scientific Instruments (**1994**), 65(2), 445-8
AB The authors describe a single-sideband homodyne reflectometer for sensitive impedance measurements in the 1 GHz range of electronic devices at liq.-helium temps. and below. At 50-pW measurement power, the instrument is capable of resolving a fractional change of 10-5 in the impedance of a nominally 50 Ω resistive device with a measurement time of one minute. The authors include details of an application to a.c. magnetoconductance measurements on mesoscopic devices, and an in situ calibration method for this application.

L34 ANSWER 96 OF 294 CA COPYRIGHT 2006 ACS on STN
AN 118:183403 CA
TI **Cancer** therapy using **microwave** electromagnetic radiation associated with drugs
IN Holt, John Alfred Gorton
PA Australia
SO Eur. Pat. Appl., 13 pp.
PI EP 531031 A1 19930310 EP 1992-307687 19920821
PRAI GB 1991-19081 A 19910906
AB **Cancer** is treated by parenteral administration of an org. disulfide (cystine or penicillamine disulfide) and/or an oxidant (cumene hydroperoxide or tert-Bu hydroperoxide) and/or an org. sulfoximine, such as methionine sulfoximine, followed by **microwave** electromagnetic (400-**450 MHz**) irradn. of the **tumor** site.

L34 ANSWER 130 OF 294 BIOSIS on STN
AN 1991:205916 BIOSIS
TI **MICROWAVE RADIOMETRY** IN THE **DETECTION** OF ESOPHAGEAL **CANCER**.
AU LI E-Z [Reprint author]; ET AL
CS HUBEI TUMOR HOSP, WUCHANG
SO Zhongguo Zhongliu Linchuang, (**1991**) Vol. 18, No. 1, pp. 29-31.
LA CHINESE
AB A flow diagram of microwave radiation in layered human **tissues** was obtained basing on the principles of bioelectromagnetics and biomedical engineering. Some important problems related to the **detection** of esophageal **cancer** by Model 846 **microwave cancer detector** were also studied. As a result an appropriate method and a set of diagnostic criteria which would be processed by microcomputer were obtained. Of 67 cases examined by Model 846 detector, 17 of 21 cases of esophageal cancer were positive, a true positive rate of 81%, while 36 of 46 control cases were negative, a true negative rate of 78.3%. The results indicate that this method might be of great value in the screening and early diagnosis of esophageal cancer.

L34 ANSWER 134 OF 294 BIOSIS on STN
AN 1990:178527 BIOSIS
TI EXPERIMENTAL **ASSESSMENT** OF PHASED-ARRAY HEATING OF NECK **TUMORS**.
AU GROSS E J [Reprint author]; CETAS T C; STAUFFER P R; LIU R-L; LUMORI M L D
CS UNIV ARIZ, DEP RADIATION ONCOL, TUCSON, AZ 85724, USA

SO International Journal of Hyperthermia, (**1990**) Vol. 6, No. 2, pp. 453-474.

AB An investigation of phased-array **microwave** systems (PAMS) for non-invasively inducing hyperthermia, primarily in neck lesions, has been done with implication for applications at other sites such as lung and pelvis. Our general approach was to combine numerical and analytical approaches with parallel experimental studies. In this paper we will concentrate only on the experimental aspects. The object, such as a homogeneous cylindrical phantom or a neck phantom, was encircled with several standard applicators driven by a single source, but with relative phase and amplitude control over each applicator. The relative phases of the applicators were adjusted by using an implanted monopole antenna connected to an HP network analyser. Power was applied and the specific absorption rate (SAR) was determined by using split phantoms and thermography or by measuring temperature transients dT/dt, recorded by implanted thermometer probes. We found that at **915 MHz** for our applicators (SMA Co.) the centre of an 11 cm diameter muscle-like phantom heated to about 33% of the value at the surface in front of the applicator. Similarly, we were able to show significant SAR at the centre of realistically sized neck phantoms using four phased apertures of **915 MHz**. Furthermore, substantial improvement was observed if the frequency was lowered to about 400 **MHz**.

L34 ANSWER 143 OF 294 BIOSIS on STN
AN 1990:111298 BIOSIS
TI APPLICATION OF ULTRASOUND TOMOGRAPHY IN THE DIAGNOSIS OF THYROID PATHOLOGY.
AU BAL'TER S A [Reprint author]; PACHES A I; ANOKHIN B M; MIRONOVA G T; CHUBAROVA N V
CS ALL-UNION ONCOL SCI CENT, ACAD MED SCI USSR, MOSCOW, USSR
SO Voprosy Onkologii (St. Petersburg), (**1989**) Vol. 35, No. 8, pp. 920-924.
LA RUSSIAN
AB The paper deals with the characteristics of application of **microwave** computed tomography in **diagnosis** of most frequent **tumors** of the thyroid gland in 146 surgical cases. The role and scope of **microwave studies** carried out in dynamic **monitoring** thyroid **cancer patients** to assure early detection of metastasis and recurrence are discussed.

L34 ANSWER 175 OF 294 MEDLINE on STN
AN 88004492 MEDLINE
DN PubMed ID: 2820732
TI **Microwaves** in **breast cancer detection.**
AU Edrich J
CS Department of Radiology, Swedish Medical Center, Englewood-Denver, Colorado.
SO European journal of radiology, **(1987 Aug)** Vol. 7, No. 3, pp. 183-93.

L34 ANSWER 182 OF 294 CA COPYRIGHT 2006 ACS on STN
AN 105:126912 CA
TI Detection of extravasation of antineoplastic drugs by microwave radiometry
AU Shaeffer, James; El-Mahdi, Anas M.; Hamwey, Albert E.; Carr, Kenneth L.
CS Dep. Radiat. Oncol. Biophys., East. Virginia Med. Sch., Norfolk, VA,

23501, USA
SO Cancer Letters (Shannon, Ireland) **(1986)**, 31(3), 285-91
AB Microwave radiometry may be used as a non-invasive technique for s.c. thermal sensing. This technique was capable of demonstrating extravasation of small vols. of fluids, including the antineoplastic agent adriamycin [23214-92-8], when these fluids were administered at room temp. in dogs. The rate of temp. drop upon extravasation was proportional to the flow rate. It is feasible that microwave radiometry may be useful as an alarm system to reduce serious complications which often accompany the extravasation of antineoplastic drugs.

L34 ANSWER 215 OF 294 MEDLINE on STN
AN 83170032 MEDLINE
DN PubMed ID: 7167503
TI Thermographic **detection** of human **cancers** by **microwave radiometry**.
AU Shaeffer J; El-Mahdi A M; Carr K L
SO Progress in clinical and biological research, **(1982)** Vol. 107, pp. 509-21.

L34 ANSWER 228 OF 294 MEDLINE on STN
AN 83155507 MEDLINE
TI **Cancer detection studies** using a 4.7 **Gigahertz radiometer**.
AU Shaeffer J; El-Mahdi A M; Carr K L
SO Cancer detection and prevention, **(1981)** Vol. 4, No. 1-4, pp. 571-8.
AB Our laboratory has begun to evaluate the **cancer detection** capabilities of a **microwave** thermographic unit that employs a 4.7 GHz radiometer. The technique is passive and noninvasive. The temperature sensitivity of the unit is less than 0.1 degrees C. Malignant tumors are often about 1 degree C warmer than normal **tissues**. Microwave radiometry can provide information related to subsurface temperatures, whereas infrared thermography is limited to surface temperatures. Positive results were obtained in four of six biopsy-proved primary carcinomas of the **breast**, in four of four **patients** with lymphoma, and in nine of ten women with recurrent **breast** cancer. Negative results were obtained in **patients** with deeply seated tumors such as in **lung**, liver, esophagus, femur, and humerus. Microwave thermography is a promising new method of noninvasive cancer detection, and the choice of a 4.7 GHz frequency may represent an improvement over units operated at other frequencies.

L34 ANSWER 235 OF 294 BIOSIS on STN
AN 1980:197898 BIOSIS
TI **MICROWAVE** THERMOGRAPHY IN THE **DETECTION** OF **BREAST CANCER**.
AU BARRETT A H [Reprint author]; MYERS P C; SADOWSKY N L
CS DEP PHYS, RES LAB ELECTRON, MASS INST TECHNOL, CAMBRIDGE, MASS 02139, USA
SO AJR (American Journal of Roentgenology), **(1980)** Vol. 134, No. 2, pp. 365-368.
AB **Microwave** thermography, a method of **sensing** subcutaneous temperatures, was used in a **breast cancer** detection study of about 5000 female **patients**. The data were taken at wavelengths of 9.1 and 23 cm. Microwave thermography at 23 cm has true-positive and true-negative detection rates of 0.8 and 0.6, respectively, comparable to those of IR thermography (0.7) and inferior to those of xeromammography (0.9).

However, a potential advantage results if microwave and IR thermography are used together for screening, and if mammography is used only for follow-up on those **patients** who were positive on either. It is then possible to obtain true-positive and true-negative detection rates of 0.9 and 0.9, respectively, while only half the number of **patients** need be subjected to X-rays.

L34 ANSWER 269 OF 294 CA COPYRIGHT 2006 ACS on STN
AN 82:122911 CA
TI Nutrition and in vivo rotational motion. Microwave study
AU Webb, Sydney J.
CS Dep. Bacteriol., Univ. Saskatchewan, Saskatoon, SK, Can.
SO International Journal of Quantum Chemistry, Quantum Biology Symposium (**1974**), 1, 245-51
AB **Tissue** cultures of normal baby hamster kidney (BHK) and BHK tumor cells transformed by mouse sarcoma virus (MSV) and Ehrlich ascites cells, having different tumor producing capacities, and **tissue** slices of human mammary and **lung** carcinoma were examd. without any fixation processes. The addn., following their exposure to a given microwave field, having a d. of 50-100 mW/cm2, the cells were cloned on agar media and implanted into susceptible animals to assess possible lethal effects. All the normal mammalian cells used absorbed frequencies of microwaves, between 50 and 90 GHz, which formed a series sepd. by 2.0 and 2.5 GHz, resp. The frequencies absorbed by the tumor cells appeared to follow 2, and perhaps 3, series sepd. by 1.9, 2.3, and 2.7 GHz, resp. Moreover, as a given strain of cell went from highly tumorigenic to nontumorigenic, the strength of attenuation in the 2.3 and 2.7 GHz series of frequencies absorbed decreased and attenuation of frequencies in the 2.5 GHz series occurred or increased. The irradn. of both the BHK and Ehrlich tumor cells with each of 2 frequencies in the 2.3 GHz series resulted in a decrease in their tumorigenicity but not viability. An in vivo movement, possibly of water or other small mols., in mammalian cells thus seems to interact with a set series of electromagnetic frequencies and is quantizized with only certain energy transitions, from 1 quantum level to the next, allowable. The difference between normal and tumor cells seems to reside in their resp. phys. rather than chem. characteristics with det. in vivo motions, and hence, structural architecture. This may also provide a method for **identification** of **tumor** cells using **microwave** spectroscopy.

=> log y
STN INTERNATIONAL LOGOFF AT 10:54:21 ON 29 AUG 2006